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Alternatives available to speed up your PC

Speed. That's the name of the game for many computer operators who sit in front of a personal computer all day. Too often, they're waiting for the computer to do some task, not the other way around. Now, several good alternatives exist to speed up your IBM PC or PC-compatible computer.

One new device, called Batram, is particularly exciting. Batram doesn't use circuit boards with faster processor chips, as do the common and currently popular add-in "turbo boards." Nor does it use faster clock speeds to do the trick. Instead, the device replaces one of the slowest components of your computer system — the mechanical disk drive — with an electronic version with no moving parts. The result is faster processing for most "disk intensive," business-type processing.

Segal

As you might expect with any new hot-shot product, Batram is expensive, and it has a few drawbacks. To give you the whole story, I'll explain the pros and cons of the various types of devices this week and share the results of my benchmark tests next week.

Here are the ways you can speed up the performance of an IBM PC or PC-compatible computer:

✔ Increase clock speed. The original speed of the IBM PC was set at 4.77 megahertz (MHz). Add-in boards and chips are available that simply increase the speed to 6, 8, 10 or 12 MHz. In theory, if you double the clock speed it will double the speed of your computer. But there's a catch — it only doubles the speed of the processor; any operations that involve the computer's hard disk, such as reading data from the disk and writing data back to the disk, are limited by the access time of the disk.

✔ Upgrade the processor. Often increasing the clock speed without using a more advanced processor results in unreliable performance. So it's common to upgrade the processor at the same time.

The processing chip that IBM uses in the IBM PC is the Intel 8088. IBM's top-of-the-line model AT was originally given the more powerful and faster 80286 chip at 6 MHz, but is now offered at 8 MHz. And a new version of the midrange XT is now available with the 80286 at 6 MHz. You can buy numerous "turbo boards" that upgrade both the processor of your computer and the clock speed at the same time. And to make this alternative even more attractive, new boards are now being offered by several companies using the new 80386 board that runs at 16 MHz.

✔ Upgrade the disk. So, if the bottleneck is the disk, what can be done about it? First, you can purchase a disk that has faster access times, although this is easier said than done. Disk access times are normally rated in milliseconds (ms), with about 60-90 ms common for XTs and ATs. Some expensive, high-performance disks are rated at 20 to 30 ms, and these are the best. Few people, however, will find it worthwhile to seek other disks when they learn about Batram.

✔ Use computer memory chips to replace the disk. This is the trick employed by Batram. Batram currently offers up to 20 megabytes of data storage on computer memory chips, and the company says that up to 70-megabyte types soon will be available. The chips are housed in a separate box that's plugged into your PC, which acts just like a disk drive. Since data stored on chips can be wiped out in an instant if there is a momentary power outage, a battery is included in the box to keep the data alive.

The big advantage to this "electronic disk," so to speak, is raw speed. Without moving parts, the disk access time of the Batram is probably under 5 ms — maybe even better.

Next week in this column, watch for the results of my benchmark testing of the Batram, along with a detailed description of the device, pricing, and a few drawbacks that you should be aware of.

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